

Adopted: 10-23-90

Log # R-625B



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: December 13, 1990

In reply refer to: R-90-51

Mr. Gilbert E. Carmichael
Administrator
Federal Railroad Administration
400 7th Street S.W.
Washington, D.C. 20590

About 9:38 a.m., Pacific standard time, on December 19, 1989, National Railroad Passenger Corporation (Amtrak) passenger train 708, consisting of one locomotive unit and five passenger cars, struck a TAB Warehouse & Distribution Company tractor semitrailer in a dense fog at a highway grade crossing near Stockton, California. The collision derailed the locomotive and all five passenger cars. A fire followed the train impact with the truck. The engineer, fireman, and the truckdriver were killed in the collision and fire. Three of the 7 train crewmembers and 49 of the 150 passengers were injured. The total estimated damage was \$2,435,000.¹

The adequacy of the crossing warning devices also depends on the light transmission intensity of the flashing lights. Since the lamp voltage was not at its rated maximum voltage, the reduced voltage affected the intensity of the flashing lights. The Safety Board is concerned about the effect the dense fog would have had on the light transmission intensity of the flashing lights; however, the Safety Board is unaware of any research on light transmission reduction in fog. Also, since the fog density at the time of the accident is unknown, the Safety Board could not determine from what distance the truckdriver saw the flashing lights or if he ever saw them. Reducing the lamp voltage greatly diminishes the brilliance and observed color of the lens, as well as the distance of light transmission and perception. The Safety Board concludes that a motorist's ability to recognize the operating grade crossing flashing lights in dense fog was probably lessened by the reduced lamp voltage.

The Rail Safety Improvement Act of 1988, enacted June 22, 1988, directed the FRA to "issue such rules, regulations, orders, and standards as may be necessary to ensure the safe maintenance, inspection, and testing of signal systems and devices at railroad highway grade crossings" within 1 year of the enactment date of the act. To date no determination has been made to issue

¹For more detailed information, read Railroad Accident Report-- "Collision of Amtrak Passenger Train No. 708 on Atchison, Topeka and Santa Fe Railway with TAB Warehouse & Distribution Company Tractor Semitrailer, Stockton, California, on December 19, 1989" (NTSB/RHR-90/01).

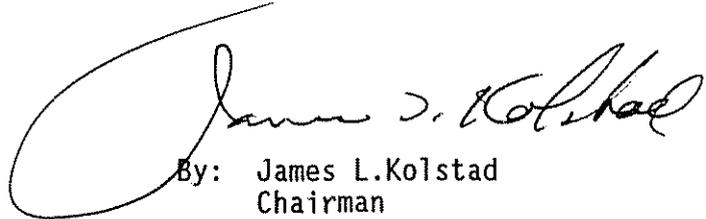
rules, regulations, orders, or standards. The Safety Board believes that the FRA should at the least promulgate regulations providing for minimum standards for applied lamp bulb voltages for railroad/highway grade crossing warning lights to ensure maximum output, proper color, brilliance, and sight distance.

Therefore, the National Transportation Safety Board recommends tha the Federal Railroad Administration:

Promulgate regulations providing for minimum standarsd for applied lamp bulb voltages for railroad/highway grade crossing warning lights to ensure optimum rated output, proper color, brilliance, and sight distance. (Class II, Priority Action) (R-90-51).

Also, the Safety Board issues Safety Recommendations R-90-45 through -49 to the National Railroad Passenger Corporation, R-90-50 to the Atchison, Topeka and Santa Fe Railway Company, H-90-92 to the Federal Highway Administration, H-90-93 to the California Department of Transportation, R-90-52 to the California Public Utilities Commission, H-90-94 and -95 to the TAB Warehouse & Distribution Company, and H-90-96 and -97 to the California Trucking Association.

KOLSTAD, Chairman, COUGHLIN, Vice Chairman, and LAUBER, BURNETT, and HART, Members concurred in this recommendation.



By: James L. Kolstad
Chairman